

## REMARKS

Entry of the foregoing and reexamination and reconsideration of the subject application, as amended, pursuant to and consistent with 37 C.F.R. § 112, are respectfully requested in light of the following remarks.

Claims 25, 26, 28-46 and 49-54 are pending in this application.

Claims 27, 47 and 48 are cancelled in this amendment. Claims 1-24 were previously cancelled.

Claims 49-54 have been added.

Claims 25 and 26 have been amended to delete compounds not encompassed by the revised subgenus developed by the Examiner which resulted from the Response to the Restriction Requirement, as recited in the Office Action. Claims 25 and 26 have also been amended to delete the word "general" from the description of formula I. Claim 25 has also been amended to recite definitions for the variables used by the Examiner, as stated in the Office Action. With regard to the definitions of  $R_1$ - $R_4$  and  $R_5$  and  $R_6$ , these definitions were altered slightly from the definition given by the Examiner. The definitions for these variables are found in U.S. Patent No. 7,253,298, which is a continuation of the instant application. Claim 33 has been amended to correct a typographical error by deleting the space before the period.

Newly added Claims 49-52 recite various specific transition metals used in the catalyst. Support for these amendments is found on page 29, lines 1 - 21. Newly added claims 53 and 54 correspond to previous claims 27 and 48, respectively, which have been cancelled. Claims 53 and 54 recite specific structures

encompassed by the restriction requirement as recited in the definitions of the variables in claim 25. Claims 27 and 28 were cancelled and replaced by newly added claims 53 and 54 to facilitate ease of review due to the numerous previously recited structures no longer encompassed due to the restriction requirement.

No new matter has been added in making these amendments.

**35 U.S.C. §112 first paragraph Rejection**

Claims 25-46 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

The Office Action indicates that the specification only provides support for using  $\text{Ni}(\text{cod})_2$  as the transition metal compound in the catalyst composition for the instant process. Applicant has not provided a representative number of examples which leads one of skill to conclude that Applicant was not in possession of the entire claimed invention at the time of filing.

Applicants would like to clarify that  $\text{Ni}(\text{cod})_2$  can be used in the production of the catalyst but  $\text{Ni}(\text{cod})_2$  is not the catalyst. The specification teaches methods of manufacturing the catalyst:

Organometallic complexes comprising the organic ligands of the invention may be prepared by contacting a solution of a compound of the selected metal with a solution of the organic ligand of the invention.  
(page 28, lines 23-26)

The specification further describes numerous metallic compounds that can be used in producing the organometallic complex. (see 29, line 23 - page 30, line 2).

One of numerous listed compounds is bis(cycloocta-1,5-diene)nickel zero (also called  $\text{Ni}(\text{cod})_2$ ). This compound was used was used to produce the eight nickel catalysts using different ligands as described on pages 44-45.

One of ordinary skill in the art would recognize that the cod groups would be replaced by the added ligands during the manufacture of the catalyst. Relevant parts of 1,5-Cyclooctadiene from wikipedia (see <http://en.wikipedia.org/wiki/1,5-Cyclooctadiene>) are shown below;

1,5-Cyclooctadiene

1,5-COD binds to metals in as a bis  $\eta^2$  ligand, meaning that it is attached to the metal center via both alkene groups. Complexes of the form  $\text{M}(\text{cod})_2$ , where M is Ni, Pd, or Pt (see image below), are often used as starting materials for the synthesis of these complexes. Metal-COD complexes are attractive because they are sufficiently stable to be isolated but the COD ligands are easily displaced by other ligands. (Emphasis added)

Therefore  $\text{Ni}(\text{cod})_2$  only is relevant to the synthesis of catalysts but is not relevant to the claimed processes.

Applicants respectfully direct the Examiner to In re Marzocchi, 439 F.2d 220, 169 U.S.P.Q. 367 which states:

As a matter of Patent Office practice, then, a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirement of the first paragraph of § 112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. Assuming that sufficient reason for such doubt does exist, a rejection for failure to teach how to make and/or use will be proper on that basis; such a rejection can be overcome by suitable proofs indicating that the teaching contained in the specification is truly enabling.

In the field of chemistry generally, there may be times when the wellknown unpredictability of chemical reactions will alone be enough to create a reasonable doubt as to the accuracy of a particular broad statement put forward as enabling support for a claim. This will especially be the case where the statement is, on its face, contrary to generally accepted scientific principles. Most often, additional factors, such as the teachings in pertinent references, will be available to substantiate any doubts that the asserted scope of objective enablement is in fact commensurate with the scope of protection sought and to support any demands based thereon for proof. In any event, it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure. In re Gazave, 379 F.2d 973, 54 CCPA 1524 (1967); In re Chilowsky, 229 F.2d 457, 43 CCPA 775 (1956) (Id at 223)

In the instant case,  $\text{Ni}(\text{cod})_2$  is one of many metallic compounds that are taught to be used to produce the catalysts. Applicants believe that the state of the art is such that there is predictability in forming the claimed metal-ligand complexes using the various metals and ligands recited in the claims.

Applicants respectfully submit that one of ordinary skill in the art would recognize that the metal compounds containing various easily removable groups could be reacted with the claimed ligands to produce the catalyst as described in the specification. Therefore the specification complies with the written description requirement.

The catalyst is the metal and the ligand, both of which have been described in numerous examples in the specification. Applicants believe there is adequate disclosure in the specification for the various transition metals recited in the claims. Claim 25 recites: "a catalyst comprising a metallic element selected from transition

metals and an organic ligand, wherein the organic ligand corresponds to formula I below: ..." The specification provides numerous specific examples for the metallic element by reciting:

Among these metals mention may be made more particularly, as non-limiting examples, of nickel, cobalt, iron, ruthenium, rhodium, palladium, osmium, iridium, platinum, copper, silver, gold, zinc, cadmium and mercury.

By way of example it is possible to indicate that in the organometallic complexes of the invention rhodium is in oxidation state (I), ruthenium in oxidation state (II), platinum in oxidation state (0), palladium in oxidation state (0), osmium in oxidation state (II), iridium in oxidation state (I), cobalt in oxidation stage (I) and nickel in oxidation state (0). (page 28, lines 17-21)

Therefore the specification provides numerous specific examples for the metallic element in the catalyst. Applicants' request this rejection be withdrawn.

### **35 U.S.C. §102(b) prior art rejection**

Claim 47 has been rejected under 35 U.S.C. §102(b) as being anticipated by Kuliev (CAS Accession Number 1964:67371)

Claim 47 has been cancelled, rendering this rejection moot.

### **Double Patenting**

Claims 25-46 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 7,253,298. The Office Action states that the instant claims overlap the '298 claims where L1 is SO<sub>2</sub>. The Office Action indicates that this rejection can be overcome by deletion of the non-elected subject matter.

The claims have been amended to require that L1 is S and subject matter where L1 is SO<sub>2</sub> was been deleted. Applicants therefore request that this rejection be withdrawn.

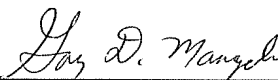
In view of the foregoing, it is believed that entry of the proposed amendments should be allowed and that the record rejections cannot be maintained against the proposed claims once entered into this application. Further, favorable action in the form of a Notice of Allowance is believed to be next in order and is earnestly solicited.

In the event that there are any questions related to this response, or the application in general, it would be appreciated if the Examiner would telephone the undersigned attorney at the below-listed telephone number concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By:   
Gary D. Mangels, Ph.D.  
Registration No. 55424

P.O. Box 1404  
Alexandria, VA 22313-1404  
703 836 6620